

LESSON LEARN FROM ECOLOGICAL CONSERVATION IN THE TOURISM DESTINATION SOUTHERN MALANG COASTAL AREA

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Abstract

The south coast Malang tourist destinations are known for their stunning natural beauty for tourists. Malang's south coast is not only known as a fascinating tourist destination, but also offers many potential natural and ecological resources. Therefore, sustainable environmental conservation management is necessary. Currently, there are at least three coastal areas that have successfully developed environmental conservation practices. The three beaches are 1) Bajulmati Beach, 2) Kondang Merak Beach and 3) Tigawarna Beach. Bajulmati Beach is a turtle conservation and a brackish water reservoir. Kondang Merak Beach is an example of coral reef conservation, and Tiga Warna Beach is a mangrove conservation site. The uniqueness of this conservation activity and the attractiveness of tourists are well known to tourists who want to learn how to conserve in a coastal environment. The purpose of this article is to collect information on the initiation of environmental conservation for leisure and tourism activities. The survey method used was a detailed interview with tourism managers and nature maintenance personnel at the survey site. In addition, in-depth were conducted with several visitors or tourists on their perceptions of the tourism and nature maintenance activities carried out. The results of in-depth with nature conservationists show that there are challenges in protecting the environment in their area. The challenge of sustainability of nature maintenance in the form of financial support must arise repeatedly. On the other hand, the challenge of environmental deterioration is recognized as a cause of damage and imbalance of nature. On the other hand, most tourists acknowledge that nature maintenance activities are one of the reasons for visiting tourist attractions on the beaches of South Malang.

Keywords: ecological resources, environment, conservation, coastal areas

1. INTRODUCTION

Malang Regency is one of the areas that has a lot of tourism potential in the form of beaches (Hardini, 2018; Sukmaratri, 2018; Putri & Amalia, 2020; Irawan, 2021). Based on the results of a field survey conducted in 2021 in the southern part of Malang Regency (Sumbermanjing Wetan, Gedangan, and Bantur Sub-districts) data were obtained for 57 beaches. The fifty-seven beaches have not been managed optimally. Only a few beaches that are considered to have the advantage of tourism potential have been developed by local community groups.

There are three beaches in the three sub-districts that are the prima donna of beach tourism. The three beaches include: 1) Tiga Warna Beach which is located in Sumbermanjing Wetan District; 2) Bajulmati Beach which is located in Gedangan District; 3) Kondang Merak Beach in Bantur District. The uniqueness of these beaches lies in nature and environmental conservation carried out by local communities.

Nature and environmental conservation carried out on each beach is different. Tiga Warna Beach has a conservation concept in the form of mangrove and coral reef conservation. Furthermore, Bajul Mati Beach has turtle conservation as its main conservation effort. Finally, Kondang Merak Beach chose coral reef conservation. Each of these beaches has advantages in nature and environmental conservation efforts.

Along with the development of the South Malang region which is marked by the construction of the Southern Java Cross Line, it also encourages the development of coastal tourism. This condition is one of the pillars that supports the economy in the South Malang area. Several tourist sites that previously had not developed have developed rapidly since the opening of JLS.

The development of tourism can increase the income of an area, but this also has an impact on the environment (Ali & El-Magd, 2016; Link et al, 2018; Chu et al, 2020; Utami, 2020). The magnitude of the potential for coastal tourism in South Malang must be balanced with sustainable tourism development. This can be done by making efforts to preserve the environment in a sustainable manner (Osland & Mackoy, 2012; Sander, 2012; Sakellari & Skanavis, 2013). Environmental conservation is urgently needed because the unspoiled environment is the most sought after tourist attraction by tourists. Damage to the coastal environment will of course reduce the attractiveness of beach tourism and reduce the number of tourists who come.

Sustainable tourism development is essentially aimed at seeking equitable distribution of development between generations (Arida, 2017). With sustainable development, the improvement of community welfare can be fulfilled in every generation, both current and future generations. Sustainable tourism aims to protect and be responsible for all natural and environmental integrity, both the physical environment and the cultural environment (Sulistiyadi et al, 2019). The application of the concept of tourism development and sustainable environmental conservation has been developed in three different beaches, namely: 1) Bajulmati Beach, 2) Kondang Merak Beach, and 3) CMC Tiga Warna Beach. The three beaches have different conservation focuses.

Bajulmati Beach is located in Gajahrejo Village, Gedangan District, Malang Regency. Bajulmati beach has a straight beach morphology with a width of more than 50 meters. Bajulmati beach has a morphological slope of up to 8° with 8-13 . field morphology°. This coastal area is not only used for tourism activities but also for turtle conservation. There are three types of turtles that lay their eggs in the gisik area of Bajulmati Beach, namely: 1) leatherback turtles (*Dermochelys coriacea*), 2) gray turtles (*Lepidochelys olivacea*), and 3) green turtles (*Chelonia mydas*).

Kondang Merak Beach is located in Sumber Bening Village, Bantur District, Malang Regency. This beach is a beach with a pocket beach morphology. This beach is located between two lands jutting into the ocean (Cape). The beach morphology which is quite hidden makes the waves in this area calmer than other southern coastal areas. The two headlands on the right and left of the beach become a natural barrier to reduce the energy of the waves entering the beach. The Kondang Merak beach area is used for coral reef conservation. This conservation is carried out by local fishing communities who care about the sustainability of marine ecology, especially in the Kondang Merak area.

Clungup Mangrove Conservation (CMC) Tiga Warna is a mangrove ecotourism that applies conservation-oriented concepts to implement sustainable tourism. This conservation area is located in Tambakrejo Village, Sitiarjo District, Malang Regency. The Tiga Warna CMC area consists of three beaches,

namely Clungup Beach, Gatra Beach, and Tiga Warna Beach. The conservation area itself is divided into two areas, namely the mangrove conservation area (Clungup Beach and Gatra Beach) and the coral reef conservation area (Tiga Warna Beach).

This study aims to collect information on the initiation of environmental conservation for recreational and tourism activities. The information referred to in this study includes: 1) Forms of environmental conservation actions, 2) Development of sustainable tourism planning, and 3) The realization of coastal tourism in South Malang as educational tourism for tourists.

2. RESEARCH METHODS

This research was conducted in three villages, namely: Gajahrejo Village, Sumber Bening Village, and Tambakrejo Village. Data collection in this study was carried out using survey methods and in-depth interviews. Data collection was carried out from January to August 2021. The survey method was carried out to determine the tourism potential contained in each research location. Meanwhile, in-depth interviews were conducted to obtain information about the environmental conservation efforts carried out by the surrounding community, as well as the obstacles. Then the information that has been collected is analyzed and explained descriptively.

Survey is a series of processes to observe and record a series of phenomena that occur in an area (Hasanah, 2017; Nugraha, 2018; da 2019; Syahril 2020). By conducting a survey all natural and social phenomena in an area can be observed thoroughly. This method is carried out to observe and collect data in the form of physical data which includes: 1) beach morphology, 2) scale width, 3) wave types, and 4) land cover. In qualitative research surveys are often combined with interviews to complete the necessary information and data (Williamson, 2018)

In-depth interviews were conducted with stakeholders who play a direct role in tourism and conservation activities. In-depth interviews were conducted to obtain information from certain parties with the aim of obtaining detailed or detailed information and data needed (Indrizal, 2016; Rachmawati, 2020; Maulana, 2020; Azhari, 2021). By conducting in-depth interviews, a lot of information and data were obtained. Where this information and data cannot be obtained from survey activities. Information and data extracted from in-depth interviews include: 1) local wisdom, 2) the history of tourism and conservation at the research site, 3) conservation efforts, and 4) obstacles in conservation efforts.

3. RESULTS AND DISCUSSION

3.1 Bajulmati Beach

The beach in the South Malang area is a natural habitat for turtles. There are three types of turtles that make the beach in southern Malang as a nesting location. The three types of turtles are: 1) leatherback turtle (*Dermochelys coriacea*), 2) gray turtle (*Lepidochelys olivacea*), 3 and green turtle (*Chelonia mydas*). These turtle eggs are then threatened due to illegal hunting and the use of the area as a tourist spot. The decreasing number of turtles returning to Bajulmati beach to lay their eggs has caused concern for the surrounding community. The community realizes that turtles are one of the important environmental chains. Therefore, the community then cooperates to protect the turtles from poaching.

The Bajulmati Sea Turtle Conservation (BSTC) started to carry out conservation. BSTC is a local community group that cares about the sustainability of turtles in the South Malang area. This group is aware that the sustainability of the turtle population in the South Malang area is threatened. In an effort to respond to this threat, BSTC established a turtle conservation shelter at Bajulmati Beach. This shelter was later named as the Turtle Capital. Turtle conservation activities in South Malang were then focused on the Turtle Capital area. The turtle hatchery can be seen in figure 1.



Figure 1. Turtle Hatchery in the Turtle Capital

The sustainability of the turtle population in South Malang is physically and anthropogenically threatened. Physically, the South Malang area is an area that has the threat of high waves. High waves can cause high levels of abrasion along the coast of South Malang. This condition affects the turtle habitat to lay eggs. This is because the turtle nesting habitat is located on the coast which is prone to erosion. In addition, high waves can also rot turtle eggs which are in the incubation process. In addition to physical threats, threats also come from humans (anthropogenic). Anthropogenic threats come from illegal hunting by irresponsible people. In addition, anthropogenic threats also come from tourists who travel in coastal areas. Many tourists do not know about turtle nesting areas, so many eggs are damaged due to lack of knowledge. Tourists often carry out activities that can threaten the turtle population. These activities include: 1) lighting a bonfire in the gisik area, 2) bringing a motor vehicle to the gisik area, and 3) stepping on the turtle nesting area. This activity will damage the turtle eggs and result in a decrease in the turtle population.

As an effort to protect turtle eggs from physical threats, BSTC conducts turtle patrols, egg relocation, hatching, and releasing turtles back to their natural habitat. However, not all turtle eggs are relocated, some are still left in the wild to maintain their naturalness. New eggs will be relocated if the area is deemed unsafe for the survival of turtle eggs. In addition, the limited number of facilities and volunteers are the main reasons for limiting the number of relocated eggs. The hatchery for turtle eggs can be seen in figure 2.



Figure 2. Turtle Egg Hatchery

Efforts to protect turtles are also carried out by educating the surrounding community not to catch turtles and hunt for their eggs. This is done to reduce anthropogenic threats to the turtle population. Education is done by word of mouth or through natural schools. The Nature School is an outdoor school established by BSTC to educate the public and tourists about turtles. Turtle conservation education activities can be seen in figure 3.



Figure 3. Turtle Conservation Activities

In addition to turtle conservation tourism activities, BSTC also provides a nature school. This natural school is an informal education aimed at the public. Nature school activities also take place in the Turtle Capital City, which is located on Bajulmati Beach. The natural school once a week, namely on Tuesdays. Teachers from the natural school are members of the BSTC themselves. The nature school focuses on turtle conservation. In addition, teaching the theory of nature schools also conducts hands-on practice on how the turtle conservation process starts from relocating eggs, hatching, to opening turtles.

3.2 Kondang Merak

Kondang Merak Beach is located in Sumber Bening Village, Bantur District, Malang Regency. This beach has a pocket beach morphology with a beach slope topography of 8-15°. Located between two headlands, this beach has waves that are quite calm when compared to other southern sea beaches. The headlands that are located on the right and left of the beach help break up the waves and reduce wave power when they reach the beach. The sea on this beach has a depth that varies from 1 to 3 meters. Based on these conditions, the famous Merak beach is used as a coral reef conservation area.

Conservation activities are carried out by the local community and fishermen. The initiation of conservation activities began when the community realized that fish catches were decreasing over time due to fishing using explosives. At first, people searched for fish using explosives. This method is considered more effective and efficient in finding fish. In addition, fishing using fish explosives is considered very economical because with little capital, fishermen can catch fish up to more than 200 kg. This activity continued for years, until almost all fishermen did the same thing and no longer used conventional methods.

The habit of using explosives only began to stop when fishermen began to realize that the fish in the waters of the Kondang Merak sea had decreased considerably. Fishing activities have become more difficult than usual. Fish are rarely found and the use of explosives is no longer effective because fish are rarely gathered. Based on the changes that have occurred, fishermen and the community are starting to realize that fish are losing their coral reef habitat to support their survival. Based on these assumptions, the community and fishermen began to make efforts to conserve coral reefs. Conservation was initially carried out using the private costs of the fishermen and the community. After starting to run, then many donors who help provide coral reef seeds to help the conservation process.

Conservation activities began to bear fruit when fish began to gather again in the Kondang Merak Beach area. In addition to bringing fish back, coral reef conservation activities create new tourist vehicles that can attract tourists. The local community then utilizes the coral reef conservation area for snorkeling and diving activities. This area is also a learning tool for students and students who are learning about marine ecosystems.

The obstacle experienced by the community and fishermen in carrying out conservation is that the cost of caring for coral reefs is more expensive than the cost of buying seeds. Many donors provide seeds but leave the full care of coral reefs to local communities and fishermen. Meanwhile, the financing of fishermen and local communities is very limited.

3.3 Tiga Warna Clungup Mangrove Conservation (CMC)

The Tiga Warna Clungup Mangrove Conservation Area (CMC) is a fairly complete ecosystem area in Malang Regency. CMC covers several beaches with an area of approximately 210 ha and is divided into two conservation areas, namely coral reef and mangrove conservation. The mangrove conservation area includes two beaches, namely Clungup Beach and Gatra Beach. Meanwhile, coral reef conservation areas include: 4 beaches, namely Savana Beach, Mini Beach, Batu Pecah Beach, and Tiga Warna Beach. Mangrove conservation areas can be seen in figures 4 and 5.



Figures 4 and 5. Mangrove conservation area at Tiga Warna Beach

This area was previously an area used for illegal logging, fishing by dangerous means such as the use of poison and explosives. This activity then destroys the original ecology of the area. Ecological damage disrupts the balance of the ecosystem and gradually harms the local population. In an effort to repair the damage that has occurred and protect the original ecology of the Tiga Warna CMC area, the government has changed the land status of the Tiga Warna CMC area from open land to a conservation area. This change in the status of the conservation area is supported by the Tambakrejo Village Regulation Number 03 of 2015 concerning Customary Law, Governance, Development, and the Environment. This regulation stipulates that the Clungup Beach area is the core zone of the mangrove protected area.

After becoming a conservation area, the Tiga Warna CMC area was monitored closely by the management. There are restrictions on tourists who can visit Tiga Warna Beach. Every day Tiga Warna Beach can only be visited by 200 people with a duration of 2 hours for each tour. In addition, tourists must use the services of a local guide to be able to visit Tiga Warna Beach. In addition, every waste brought by tourists into the Tiga Warna CMC area is recorded in detail. Garbage brought in must be the same as trash taken out. If there are violators, the violators are given two options, namely looking for the remaining trash or paying a fine of Rp. 50,000 each trash. This is done to maintain the mangrove ecosystem and coral reefs in the conservation area.

3.4 Lesson learns from natural conservation from coastal and beach in South Malang

Meaningful learning at the research site can be described as a continuous process. Conservation activities are initiated by community groups who live and have activities in the coastal and coastal environment. Community groups at Tiga Warna Beach focus on mangrove and coral reef conservation. This activity received serious attention from various parties in an effort to preserve the natural environment. Learning activities directly in the field accompanied by local residents as tour guides have provided knowledge and experience to visitors about the meaning of protecting and preserving the environment. These positive values can be taken and applied in other places when visitors have gone home.

On the other hand, community groups at Bajul Mati Beach are also trying to conserve the coastal environment, especially for turtle conservation. This community group has collaborated with several stakeholders both from the government, universities, and from companies. Learning support in the form

of turtle care and breeding sites has existed since 2019. Real efforts in turtle conservation are carried out in a sustainable manner. Some examples of activities that have been carried out by this community group include: 1) patrolling and monitoring turtle nesting locations, 2) relocating turtle eggs, 3) incubating turtle eggs, 4) releasing turtle chicks into their habitat, and 5) providing education about turtles. to the public and tourists.

Furthermore, coral reef conservation activities in the Kondang Merak coastal environment are examples of sustainable environmental conservation that have been initiated by local communities. Coral reef conservation activities have provided many benefits both from an environmental and economic point of view. From an environmental point of view, since the conservation of coral reefs, the habitat of fish, marine animals, and marine plants has recovered as before before the destruction by unscrupulous people. This benefit is felt to have an economic impact on variations in yields and the number of fish catches and other marine biota. The increasing number of tourists who want to dive to see the beauty of coral reefs at Kondang Merak Beach has increased the local economy of the community.

CONCLUSION

Malang Regency has three beaches that are used as tourism and conservation areas. The three beaches are: 1) Tiga Warna Beach which is located in Sumbermanjing Wetan District; 2) Bajulmati Beach which is located in Gedangan District; 3) Kondang Merak Beach in Bantur District. Nature and environmental conservation carried out on each beach is different. Tiga Warna Beach is a mangrove and coral reef conservation area. Bajul Mati Beach is a turtle conservation area. Kondang Merak Beach is a coral reef conservation area. The conservation is initiated and carried out by local community groups. Based on these results, it can be indicated that community groups, in this case those engaged in nature and environmental conservation, are a good form of learning organizations. As the following explanation learning organizations use a team-based structure while supporting team members' desires for gains as individuals, and work to achieve a shared vision and understanding of the world, most commonly drawing from systems theory.

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